THE ASTROPHYSICAL JOURNAL

Founded in 1895 by George E. Hale and James E. Keeler

HELMUT A. ABT
Managing Editor
Kitt Peak National Observatory

A. DALGARNO
Letters Editor
Center for Astrophysics

EUGENE H. AVRETT
Deputy Letters Editor
Center for Astrophysics

YERVANT TERZIAN
Associate Editor
Cornell University

VIRGINIA TRIMBLE
Associate Editor
University of Maryland and
University of California, Irvine

F. DAVID A. HARTWICK
Associate Letters Editor
University of Victoria

MICHAEL JURA
Associate Letters Editor
University of California, Los Angeles

EDWIN E. SALPETER
Associate Letters Editor
Cornell University

AAS PUBLICATIONS BOARD

CATHERINE PILACHOWSKI (1989–1992), *Chairperson*
Kitt Peak National Observatory

FRANÇOIS SCHWEIZER (1990–1993)
Carnegie Institution of Washington

JACQUELINE H. VAN GORKOM (1990–1993)
Columbia University

JAMES W. LIEBERT (1991–1994)
University of Arizona

KRISTEN SELLGREN (1991–1994)
Ohio State University

H. J. G. L. M. LAMERS (1992–1995)
SRON Laboratory for Space Research, The Netherlands

HUGH M. VAN HORN (1992–1995)
University of Rochester

Production Manager: TULIE O'CONNOR

Chief Manuscript Editor: GERALDINE BRADY

Manuscript Editors: WALTER G. GLASCOFF III, BETH GARRISON, KAREN LESLIE BOYD, THAD A. DORIA, AND DAVID E. ANDERSON

Production Staff: ELIZABETH HUGHES, GRACE S. WHITE, IVAN BRUNETTI, AZISTI DEMBOWSKI, AND VIRGINIA M. BOYCE

VOLUME 395, PART 2
1992 AUGUST 10 AND AUGUST 20

PUBLISHED BY THE UNIVERSITY OF CHICAGO PRESS FOR
THE AMERICAN ASTRONOMICAL SOCIETY

© 1992 BY THE AMERICAN ASTRONOMICAL SOCIETY. ALL RIGHTS RESERVED.
PUBLISHED THREE TIMES A MONTH

COMPOSED BY SANTYPE INTERNATIONAL LIMITED, SALISBURY, ENGLAND

PRINTED BY CAPITAL CITY PRESS, INC.

MONTPELIER, VERMONT, U.S.A.

THE ASTROPHYSICAL JOURNAL LETTERS

CONTENTS OF VOLUME 395, PART 2

1992 AUGUST 10, Number 1

	Page	Fiche
THE ULTRAVIOLET IMAGING TELESCOPE: DESIGN AND PERFORMANCE *Theodore P. Stecher, Gerald R. Baker, Donna D. Bartoe, Frank H. Bauer, Albert Blum, Ralph C. Bohlin, Harvey R. Butcher, Peter C. Chen, Nicholas R. Collins, Robert H. Cornett, John J. Deily, Michael R. Greason, Gregory S. Hennessy, Jesse K. Hill, Robert S. Hill, Paul M. Hintzen, Joan E. Isensee, Peter J. Kenny, Wayne B. Landsman, David L. Linard, Stephen P. Maran, Susan G. Neff, Granville R. Nichols, Joseph Novello, Robert W. O'Connell, Joel D. Offenberg, Ronald A. Parise, Barbara B. Pfarr, Thomas B. Plummer, Foy F. Richardson, Morton S. Roberts, Susan D. Sitko, Andrew M. Smith, Alfred K. Stober, John D. Stolarik, & Jack C. Tebay*	L1	144-C7
ULTRAVIOLET IMAGING TELESCOPE IMAGES OF THE REFLECTION NEBULA NGC 7023: DERIVATION OF ULTRAVIOLET SCATTERING PROPERTIES OF DUST GRAINS *Adolf N. Witt, Jens K. Petersohn, Ralph C. Bohlin, Robert W. O'Connell, Morton S. Roberts, Andrew M. Smith, & Theodore P. Stecher*	L5	144-D1
ULTRAVIOLET IMAGING TELESCOPE OBSERVATIONS OF THE CYGNUS LOOP *Robert H. Cornett, Edward B. Jenkins, Ralph C. Bohlin, Kwang-Ping Cheng, Theodore R. Gull, Paul M. Hintzen, Robert W. O'Connell, Robert A. R. Parker, Morton S. Roberts, Andrew M. Smith, Eric P. Smith, & Theodore P. Stecher*	L9	144-D7
ULTRAVIOLET IMAGING TELESCOPE OBSERVATIONS OF THE CRAB NEBULA *Gregory S. Hennessy, Robert W. O'Connell, Kwang P. Cheng, Ralph C. Bohlin, Nicholas R. Collins, Theodore R. Gull, Paul Hintzen, Joan E. Isensee, Wayne B. Landsman, Morton S. Roberts, Andrew M. Smith, Eric P. Smith, & Theodore P. Stecher*	L13	144-E5
AN ULTRAVIOLET IMAGING TELESCOPE STUDY OF THE GLOBULAR CLUSTER M79 (NGC 1904) *Robert S. Hill, Jesse K. Hill, Wayne B. Landsman, Ralph C. Bohlin, K.-P. Cheng, Paul M. N. Hintzen, Robert W. O'Connell, Morton S. Roberts, Andrew M. Smith, Eric P. Smith, & Theodore P. Stecher*	L17	144-F1
THE ULTRAVIOLET-BRIGHT STARS OF OMEGA CENTAURI, M3, AND M13 *Wayne B. Landsman, Robert W. O'Connell, Jonathan H. Whitney, Ralph C. Bohlin, Robert S. Hill, Stephen P. Maran, Ronald A. Parise, Morton S. Roberts, Andrew M. Smtih, & Theodore P. Stecher*	L21	144-F9
OBSERVATIONS OF THE LIGHT ECHOES FROM SN 1987A USING THE *ASTRO-1* ULTRAVIOLET IMAGING TELESCOPE *Arlin P. S. Crotts, Wayne B. Landsman, Ralph C. Bohlin, Robert W. O'Connell, Morton S. Roberts, Andrew M. Smith, & Theodore P. Stecher*	L25	144-G7
ASTRO-1 ULTRAVIOLET IMAGING OF THE 30 DORADUS AND SN 1987A FIELDS WITH THE ULTRAVIOLET IMAGING TELESCOPE *Kwang-Ping Cheng, Andrew G. Michalitsianos, Paul Hintzen, Ralph C. Bohlin, Robert W. O'Connell, Robert H. Cornett, Morton S. Roberts, Andrew M. Smith, Eric P. Smith, & Theodore P. Stecher*	L29	145-A1
ULTRAVIOLET IMAGING TELESCOPE PHOTOMETRY OF MASSIVE STARS: THE OB ASSOCIATION NGC 206 IN M31 *Jesse K. Hill, Barbara B. Pfarr, Ralph C. Bohlin, Joan E. Isensee, Robert W. O'Connell, Susan G. Neff, Morton S. Roberts Andrew M. Smith, & Theodore P. Stecher*	L33	145-B1
ULTRAVIOLET IMAGING TELESCOPE ULTRAVIOLET IMAGES: LARGE-SCALE STRUCTURE, H II REGIONS, AND EXTINCTION IN M81 *Jesse K. Hill, Ralph C. Bohlin, Kwang-Ping Cheng, Paul M. N. Hintzen, Wayne B. Landsman, Susan G. Neff, Robert W. O'Connell, Morton S. Roberts, Andrew M. Smith, Eric P. Smith, & Theodore P. Stecher*	L37	145-B9
ULTRAVIOLET IMAGING TELESCOPE OBSERVATIONS OF THE Scl GALAXY NGC 628 (M74) *Peter C. Chen, Robert H. Cornett, Morton S. Roberts, Ralph C. Bohlin, Susan G. Neff, Robert W. O'Connell, Ronald A. Parise, Andrew M. Smith, & Theodore P. Stecher*	L41	145-C5
ULTRAVIOLET IMAGING OF OLD POPULATIONS IN NEARBY GALAXIES *Robert W. O'Connell, Ralph C. Bohlin, Nicholas R. Collins, Robert H. Cornett, Jesse K. Hill, Robert S. Hill, Wayne B. Landsman, Morton S. Roberts, Andrew M. Smith, & Theodore P. Stecher*	L45	145-D1

	Page	Fiche
IMPLICATIONS OF ULTRAVIOLET IMAGING TELESCOPE OBSERVATIONS FOR STAR FORMATION HISTORIES IN NGC 1275 *Eric P. Smith, Robert W. O'Connell, Ralph C. Bohlin, Kwang-Ping Cheng, Robert H. Cornett, Jesse K. Hill, Robert S. Hill, Paul Hintzen, Wayne B. Landsman, Susan G. Neff, Morton S. Roberts, Andrew M. Smith, & Theodore P. Stecher*	L49	145-D9
INSTRUCTIONS TO AUTHORS OF *LETTERS*, RECENT *LETTERS* ABSTRACTS, AUTHOR AND SUBJECT INDEXES	*Inside Back Cover*	

1992 AUGUST 20, Number 2

	Page	Fiche
LARGE-SCALE MICROWAVE ANISOTROPY FROM GRAVITATING SEEDS *Shoba Veeraraghavan & Albert Stebbins*	L55	153-E1
SURVIVING COSMOLOGICAL MODELS AFTER THE DISCOVERY OF LARGE-ANGLE ANISOTROPIES OF THE COSMIC MICROWAVE BACKGROUND *Naoteru Gouda & Naoshi Sugiyama*	L59	153-E7
CONTINUUM AND C III] MICROLENSING IN Q2237+0305 AND THE QUASAR GEOMETRY *René Racine*	L65	153-F1
A NEW HARD X-RAY SOURCE 15′ AWAY FROM 3C 273? *E. Jourdain, L. Bassani, J. P. Roques, P. Mandrou, J. Ballet, A. Claret, A. Goldwurm, F. Lebrun, A. Finogenov, E. Churazov, M. Gilfanov, R. Sunyaev, A. Dyachkov, N. Kavenson, B. Novikov, & N. Kuleshova*	L69	153-F6
INFRARED EMISSION IN SEYFERT 2 GALAXIES: REPROCESSED RADIATION FROM A DUSTY TORUS? *Thaisa Storchi-Bergmann, John S. Mulchaey, & Andrew S. Wilson*	L73	153-F12
TWIN PEAKS OF CO EMISSION IN THE CENTRAL REGIONS OF BARRED GALAXIES *Jeffrey D. P. Kenney, Christine D. Wilson, Nick Z. Scoville, Nicholas A. Devereux, & Judith S. Young*	L79	153-G5
GAMMA-RAY BURSTS AS THE DEATH THROES OF MASSIVE BINARY STARS *Ramesh Narayan, Bohdan Paczyński, & Tsvi Piran*	L83	153-G10
A DETERMINATION OF THE MASS OF SAGITTARIUS A* FROM ITS RADIO SPECTRAL AND SOURCE SIZE MEASUREMENTS *Fulvio Melia, J. R. Jokipii, & Ajay Narayanan*	L87	154-A1
DETECTION OF WC9 STARS IN NCG 1365 *Andrew C. Phillips & Peter S. Conti*	L91	154-A6
SODIUM, ALUMINUM, AND OXYGEN ABUNDANCE VARIATIONS IN GIANTS IN THE GLOBULAR CLUSTER M4 *Jeremy J. Drake, Verne V. Smith, & Nicholas B. Suntzeff*	L95	154-A10
EVIDENCE FOR LARGE-SCALE EXPANDING MOTIONS WITHIN THE ORION A MOLECULAR CLOUD *M. H. Heyer, J. Morgan, F. P. Schloerb, R. L. Snell, & P. F. Goldsmith*	L99	154-B1
HIGH-RESOLUTION OPTICAL IMAGING OF THE LARGE MAGELLANIC CLOUD PLERION 0540−69 *P. A. Caraveo, G. F. Bignami, S. Mereghetti, & M. Mombelli*	L103	154-B11
THE WHITE DWARF COMPANION TO PSR 0820+02 *D. Koester, G. Chanmugam, & D. Reimers*	L107	154-C7
THE 8–13 MICRON SPECTRUM OF THE YOUNG STELLAR OBJECT WL 16 *M. S. Hanner, A. T. Tokunaga, & T. R. Geballe*	L111	154-C12
EVIDENCE FOR UNSEEN COMPANIONS AROUND T TAURI STARS *Kenneth A. Marsh & Michael J. Mahoney*	L115	154-D1
HELIUM DIFFUSION IN THE SUN *J. N. Bahcall & M. H. Pinsonneault*	L119	154-D7
ERRATUM		
THE STRUCTURE OF THE INNER ARCSECOND OF R AQUARII OBSERVED WITH THE *Hubble Space Telescope* *Denis Burgarella & Francesco Paresce*	L123	154-D13
INSTRUCTIONS TO AUTHORS OF *LETTERS*, RECENT *LETTERS* ABSTRACTS, AUTHOR AND SUBJECT INDEXES	*Inside Back Cover*	